

CLAIMS

What is claimed is:

1. A hydraulic motor apparatus for connection to a hydraulic power supply of a tractor wherein the tractor comprises a plurality of hydraulic supply circuits, and wherein each hydraulic supply circuit comprises a pair of quick couplers for connecting the hydraulic supply circuit to a hydraulic device, the apparatus comprising:

a first pair of hydraulic lines adapted for connection to the quick couplers of a first hydraulic supply circuit;

a second pair of hydraulic lines adapted for connection to the quick couplers of a second hydraulic supply circuit;

a hydraulic motor connected to both the first and second pairs of hydraulic lines such that fluid can flow from both the first and second hydraulic supply circuits through the hydraulic motor to drive the hydraulic motor.

2. The apparatus of Claim 1 wherein:

the first pair of hydraulic lines comprises a first pressure line and a first return line adapted for connection to the quick couplers of the first hydraulic supply circuit such that hydraulic fluid can flow out from the first hydraulic supply circuit through the first pressure line and back into the first hydraulic supply circuit through the first return line;

the second pair of hydraulic lines comprises a second pressure line and a second return line adapted for connection to the quick couplers of the second hydraulic supply circuit such that hydraulic fluid can flow out from the second hydraulic supply circuit through the second pressure line and back into the second hydraulic supply circuit through the second return line; and

the hydraulic motor has a pressure port connected to both the first and second pressure lines, and a return port connected to both the first and second return lines.

3. The apparatus of Claim 2 further comprising a second hydraulically activated device having first and second ports for attachment to a hydraulic supply circuit, and wherein the first port is connected to both the first and second pressure lines, and the second port is connected to both the first and second return lines.

4. The apparatus of Claim 3 wherein the second hydraulically activated device comprises an active hydraulic circuit.
5. The apparatus of Claim 4 where in operation a substantially continuous flow of hydraulic fluid passes through the active hydraulic circuit.
6. The apparatus of Claim 4 where in operation hydraulic fluid passes through the active hydraulic circuit on demand.
7. The apparatus of Claim 2 further comprising a hydraulic block comprising a pressure chamber and a return chamber, and wherein the first and second pressure lines are connected to the pressure chamber, the first and second return lines are connected to the return chamber, the pressure port on the hydraulic motor is connected to the pressure chamber, and the return port on the hydraulic motor is connected to the return chamber.
8. The apparatus of Claim 7 further comprising a second hydraulically activated device having a first port connected to the pressure chamber and a second port connected to the return chamber.

9. The apparatus of Claim 8 wherein the second hydraulically activated device comprises a second hydraulic motor.
10. The apparatus of Claim 8 wherein the second hydraulically activated device comprises a hydraulic cylinder.
11. The apparatus of Claim 8 wherein the second hydraulically activated device comprises an active hydraulic circuit where in operation a substantially continuous flow of hydraulic fluid passes through the active hydraulic circuit.
12. The apparatus of Claim 11 further comprising a remote-controlled valve operative to block the flow of hydraulic fluid through the active hydraulic circuit.
13. The apparatus of Claim 2 further comprising:

a second hydraulically activated device having first and second ports for attachment to a hydraulic supply circuit;

a valve apparatus having a pair of device ports operatively connected to the first and second ports, and a pair of power ports; and

wherein one of the power ports is connected to both the first and second pressure lines, and the other of the power ports is connected to both the first and second return lines.

14. The apparatus of Claim 13 wherein the second hydraulically activated device comprises a hydraulic cylinder.
15. The apparatus of Claim 13 wherein the second hydraulically activated device comprises a second hydraulic motor.
16. The apparatus of Claim 13 wherein the valve apparatus is operative in a first mode of operation to direct hydraulic fluid from the first and second pressure lines to the first port, and is operative in a second mode of operation to direct hydraulic fluid from the first and second pressure lines to the second port.
17. A method of driving a hydraulic motor with a hydraulic power supply of a tractor wherein the tractor comprises a plurality of hydraulic supply circuits, and wherein each hydraulic supply circuit comprises a quick coupler for connecting a pressurized fluid output of the hydraulic supply circuit to a hydraulic device, the method comprising:

connecting a first hydraulic pressure line to the quick coupler of a first hydraulic supply circuit;

connecting a second hydraulic line to the quick coupler of a second hydraulic supply circuit;

connecting a pressure port of the hydraulic motor to both the first and second hydraulic pressure lines and connecting a return port of the hydraulic motor to a hydraulic return line connected to the hydraulic power supply of the tractor such that fluid can flow from both the first and second hydraulic supply circuits through the hydraulic motor to drive the hydraulic motor.

18. The method of Claim 17 further comprising connecting a second hydraulically activated device to both the first and second hydraulic pressure lines such that fluid can flow from both the first and second hydraulic supply circuits to the second hydraulically activated device.
19. The method of Claim 18 further comprising providing a valve to control the flow of fluid to the second hydraulically activated device.

20. The method of Claim 18 wherein the second hydraulically activated device comprises an active hydraulic circuit connected to both the first and second hydraulic pressure lines and the hydraulic return line such that fluid can flow from both the first and second hydraulic supply circuits through the active hydraulic circuit.
21. The method of Claim 20 further comprising providing a remote-controlled valve operative to block the flow of hydraulic fluid through the active hydraulic circuit.
22. A hydraulic motor apparatus for connection to a hydraulic power supply of a tractor wherein the tractor comprises a plurality of hydraulic supply circuits, and wherein each hydraulic supply circuit comprises a pressure quick coupler for connecting a pressurized fluid output of the hydraulic supply circuit to a hydraulic device, the apparatus comprising:
 - a first hydraulic pressure line adapted for connection to the pressure quick coupler of a first hydraulic supply circuit;
 - a second hydraulic pressure line adapted for connection to the pressure quick coupler of a second hydraulic supply circuit;

a hydraulic motor connected to both the first and second hydraulic pressure lines, and connected to a return line that is operative to conduct hydraulic fluid from the hydraulic motor to a hydraulic reservoir on the tractor such that fluid can flow from both the first and second hydraulic supply circuits through the hydraulic motor to drive the hydraulic motor.

23. The apparatus of Claim 22 wherein the return line is connected to the hydraulic reservoir through a dump port.